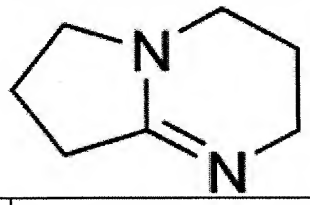
1,5-Diazabicyclo(4.3.0)non-5-ene

From Wikipedia, the free encyclopedia
(Redirected from DBN)

For the record label, see Drop Bass Network (DBN)

1,5-Diazabicyclo[4.3.0]non-5-ene (DBN) is a chemical compound with the formula $C_7H_{12}N_2$.[1] It is an amidine base used in organic synthesis. A related compound with a related functions is 1,8-diazabicyclo[5.4.0]undec-7-ene (DBU). The relatively complex nature of the formal names for DBU and DBN (hence the common use of acronyms) reflects the fact that these compounds are bicyclic and contain several functional groups.

The compounds are employed for dehydrohalogenation reactions as well as base-catalyzed rearrangements.

1,5-Diazabicyclo[4.3.0]non-5-ene	
	
IUPAC name	1,5-Diazabicyclo[4.3.0]non-5-ene
Other names	DBN
Identifiers	
CAS number	3001-72-7 (http://www.emolecules.com/cgi-bin/search?t=ss&q=3001-72-7&c=0&v=)
SMILES	N1(CCC2)C2=NCCC1
Properties	
Molecular formula	$C_7H_{12}N_2$
Molar mass	124.18 g/mol
Density	1.005 g/cm³
Boiling point	95–98 °C at 7.5 mmHg
Except where noted otherwise, data are given for materials in their standard state (at 25 °C, 100 kPa) Infobox disclaimer and references	

References

1. ^ Ann C. Savoca, A. C. "1,5-Diazabicyclo[4.3.0] non-5-ene" in *Encyclopedia of Reagents for Organic Synthesis* (Ed: L. Paquette) 2004, J. Wiley & Sons, New York. doi:10.1002/047084289 (http://dx.doi.org/10.1002/047084289)

Protic solvent

From Wikipedia, the free encyclopedia
(Redirected from Aprotic solvent)

In chemistry a **protic solvent** is a solvent that carries a hydrogen bond between an oxygen as in a hydroxyl group or a nitrogen as in an amine group. More generally, any molecular solvent which contains dissociable H^+, such as hydrogen fluoride, is called a **protic solvent**. The molecules of such solvents can donate an H^+ (proton). Conversely, **aprotic solvents** cannot donate hydrogen bonds.

Common characteristics of protic solvents:

- solvents display hydrogen bonding
- solvents have an acidic hydrogen (although they may be very weak acids)
- solvents are able to stabilize ions
  - cations by unshared free electron pairs
  - anions by hydrogen bonding

Examples are water, methanol, ethanol, formic acid, hydrogen fluoride and ammonia.

Polar aprotic solvents are solvents that share ion dissolving power with protic solvents but lack an acidic hydrogen. These solvents generally have high dielectric constants and high polarity.

Examples are dimethyl sulfoxide, dimethylformamide, and hexamethylphosphorotriamide.

Polar protic solvents are favorable for S_N1 reactions, while polar aprotic solvents are favorable for S_N2 reactions. Apart from solvent effects, polar aprotic solvents may also be essential for reactions which use strong bases, such as reactions involving Grignard reagents or n-butyl lithium. If a protic solvent were to be used, the reagent would be consumed by a side reaction with the solvent.

References

Loudon, G. Mark. Organic Chemistry 4th ed. New York: Oxford University Press. 2002. pg 317.

Category: Solvents